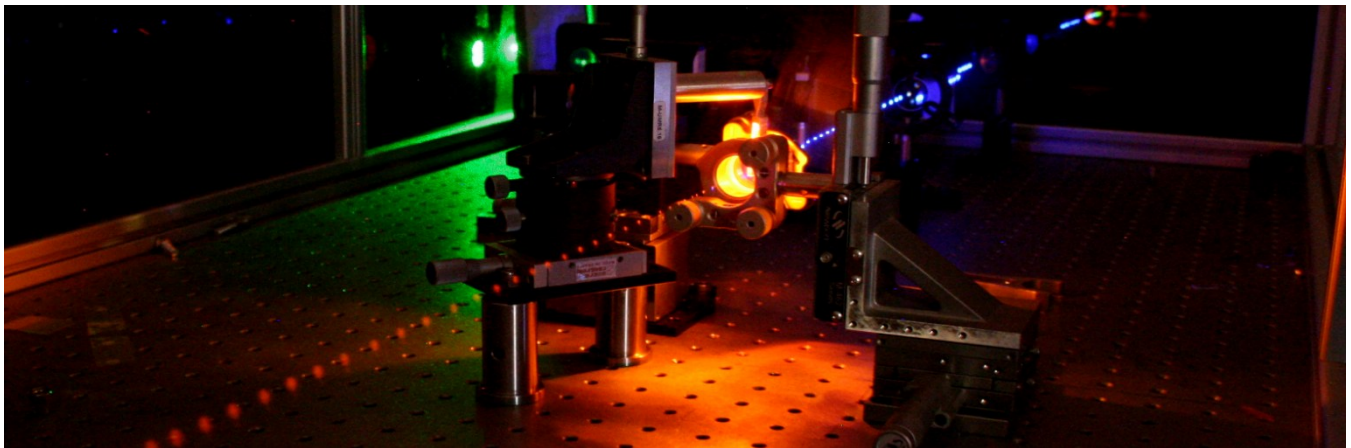


Research Engineer – Optical Instrumentation Expert (M/F)

We are looking for a research engineer to strengthen the "[Organic Photonics and Lasers](#)" group at the [Laser Physics Laboratory](#) of [Université Sorbonne Paris Nord](#), located in [Villetaneuse](#), Greater Paris, France.

The position will be open for competition in April 2025, with interviews and an oral admission exam in the summer, for a start in December 2025. It is a permanent public service position in the ITRF (category A) framework, accessible through an external competitive examination, and assigned to Sorbonne Paris North University. More details about the competition and the conditions to apply (in French): <https://www.enseignementsup-recherche.gouv.fr/fr/recrutements/itrf>



Research Context

In the field of optoelectronics, industries relying on rare and non-renewable resources (such as gallium or rare earth elements) still dominate the market. However, emerging technologies have recently appeared, promising lower costs, reduced environmental impact, while also opening up new application horizons and markets. This is particularly true for organic optoelectronics, whose greatest success to date is the industrial maturity of OLED (Organic Light Emitting Diode) technology, now widely used in smartphone displays. More recently, organic lasers have become a key challenge in this field.

The "Organic Photonics And Lasers" group at LPL is one of the rare groups in France working on this topic, with the support of many national and international collaborations, especially in organic chemistry. Our work focuses on the development of organic solid-state lasers operating under unconventional regimes (continuous-wave operation, ultrashort pulses) or featuring innovative laser architectures.

Our group is involved in a CNRS International Research Project [LuxErit](#) with Pr Adachi's group at Kyushu University in Japan, which is expected to evolve into an International Research Lab. We are currently engaged in three ANR projects: PULSE (on ultrashort organic lasers), MELODIE (on the development of new polymer materials for organic lasers), and NEWLIGHT (on organic luminescent concentrators). Additionally, we are working on establishing an international research network (IRN) on light-emitting organic devices.

Our core expertise lies in developing laser architectures and experimental techniques for the photophysical characterization of materials and structures. In the short term, we plan to launch a new research initiative on organic polariton lasers, which could pave the way for advancements in quantum technologies—or perhaps even other, yet unexplored, domains.

More information on our website: <https://www.organicphotonics-lasers-lpl.com/>

Engineer's Missions

The engineer will ensure the operation, optimization, and development of organic photonics experiments within the OPAL (Organic Photonics And Lasers) team. They will work in two types of experimental environments: a photonics experiment room (equipped with laser sources, spectroscopy tools, imaging tools, and control systems), which will be the primary focus of their activities but also a cleanroom environment, where they may be involved in fabricating photonic or optoelectronic devices.

Additionally, the engineer may be required to conduct modeling work to compare experimental results with theoretical models. As a full member of the team, currently composed of three permanent faculty researchers, they will contribute to research project development, dissemination of results, and collaboration efforts, both ongoing and future.

Mission 1: Design and Develop Experiments and Modeling

- Design and develop new experimental systems for organic photonics within the OPAL team, particularly involving lasers, spectroscopy tools, photophysical characterization, and quantum optics devices.
- Use numerical simulation tools to conduct modeling related to experiments and compare experimental results with theoretical models.
- Develop autonomous control systems to enable automated operation of experiments and data acquisition.
- Design and implement projects involving micro/nanofabrication (particularly thin-film deposition) in cleanroom environments, either at the Sorbonne Paris Nord facility or partner universities, using techniques such as sputtering, ALD, or evaporation (prior expertise in these techniques is not required and can be acquired on the job).
- *(Optional)* Conduct short- or medium-term research stays in partner laboratories, particularly at Kyushu University in Japan, where an International Research Laboratory (IRL) involving LPL is being established.

Mission 2: Ensure the Functionality and Development of the Research Team

- Contribute to discussions on the scientific and technological evolution of experimental setups and lead these developments.
- Organizing the lab's daily life: initiating and monitoring purchase procedures.
- Collaborate with the laboratory's mechanical, electronics, and optics departments for custom-built systems, overseeing progress, and testing implementations.

Mission 3: Contribute to Research Dissemination and Knowledge Transfer

- Supervise postdoctoral researchers, PhD students, and interns within the team.
- Write experimental reports and technical documentation.
- Contribute to the writing of scientific publications, potential patents, and activity reports.
- *(Optional)* Present research results at national or international conferences.

Mission 4: Serve as the Innovation and Technology Transfer specialist for the group and the lab

- Assess the potential for technology transfer and commercialization of the group's projects and contribute to their development.
- More broadly, provide guidance and support to all LPL research teams in their valorization efforts.

Required Skills

- **Knowledge:**
 - Strong background in general physics, particularly in photonics and laser physics.
 - Expertise in instrumentation, interfacing techniques, and experiment control systems.
 - English proficiency: oral and written comprehension and expression at a B2 level or higher.
- **Technical Skills:**
 - Ability to set up and align complex photonics experiments, from the light source to detection (mandatory).
 - Ability to interface experiments, process data, and present experimental results.
 - Experience with micro/nanofabrication tools (thin-film deposition, lithography, etching, back-end processing) in a cleanroom environment for photonic device fabrication (*not a mandatory prerequisite—this skill can be acquired on the job*).
- **Soft Skills:**
 - Ability to work effectively in a team and communicate with colleagues, technical/scientific collaborators.
 - Rigor and attention to detail.
 - Autonomy and strong organizational skills.

Desired Profile

A strong background in optics/photonics is essential, with specialization in laser physics and/or solid-state physics, as well as extensive experience in instrumentation and experimental control. Additional skills that would be appreciated (*but are not specifically required*) include: experience in modeling/simulation, photonic device fabrication in a cleanroom, or familiarity with organic semiconductor physics. A PhD in Optics/Photonics is strongly recommended.

Contact

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Lab director : Anne Amy-Klein amy@univ-paris13.fr

Administrative Information

POSITION IDENTIFICATION

- **Job Title:** Research Engineer – Optical Instrumentation Expert (M/F)
- **Category:** A
- **Workload Allocation:** 100%
- **Reference in the Job-Type Framework – REFERENS III:** C1B42
- **Professional Activity Branch (BAP):** C – “Engineering Sciences and Scientific Instrumentation”
- **Professional Activity Family:** Expert in Instrumentation Development (C1B42)
- **Job Type:** Research Engineer / Job Type Code: C1B42
- **Statutory Correspondence:** Research Engineer
- **Required Degree:** Master’s degree / Engineering degree – PhD preferred

UNIVERSITY PRESENTATION

Sorbonne Paris North University (Université Sorbonne Paris Nord - USPN) is a major center for education and research located in the northern region of Paris. It is a multidisciplinary university with nearly 25,000 students enrolled in initial and continuing education programs across nine academic divisions (five faculties, three university institutes of technology, and one institute), distributed across five campuses.

Research activities are conducted within **30 research units**, some of which are affiliated with **CNRS** or **Inserm**, along with federative research structures, research platforms, **two doctoral schools**, one **graduate school**, several **LabEx (Laboratories of Excellence)** and **EquipEx (Equipment of Excellence)** programs that strengthen its research framework.

WORK ENVIRONMENT

- **Work Location:** Université Sorbonne Paris Nord (USPN) – [Villetaneuse Campus](#)
- **Department / Service:** Galilée Institute (IG) / Laser Physics Laboratory (LPL, CNRS UMR 7538)
- **Team Size:** 90
- **Supervisory Role:** No
- **Reporting Line:** LPL Management and the Administrative & Financial Manager of the Galilée Institute
- **Salary:** Category A+